

U.S. Patent Application No. 10/784,379
Amendment dated April 15, 2005
Reply to Office Action of December 17, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-19. (canceled)

20. (original) An operation method of an optical information reader having a switching means for setting an operation mode from all of registered operation modes to decide an operation state of said optical information reader, providing a desired operation function corresponding to said set operation mode and executing said provided operation function, said method comprising:

a setup step for setting at least one operation mode to determine an operation state of said optical information reader based on a first predetermined pressed time of said switching means;

a providing step for providing a selectable operation function corresponding to said operation mode;

a selection step for selecting said operation mode by said switching means; and

an execution step for executing said provided operation function corresponding to said selected operation mode based on a second predetermined pressed time being different from said first predetermined pressed time.

21. (currently amended) An optical information reader comprising:

a trigger means for instructing to start reading data in a read object;

a decode means for receiving a reflected light from the read object and decoding the data in the read object;

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a user-selectable function switch capable of executing a function different from that of the trigger means;

a memory storing at least one read operation mode in which data decoded by the decode means is outputted, a previous data resending function, an arbitrary character string sending function for sending a predetermined character string as a selectable function, and at least one check operation mode for checking the data decoded by the decode means by comparing the decoded data with a registered data, wherein the registered data is a result of reading the read object, and outputting a check result,

wherein when an operation mode is selected from a plurality of read operation mode and check operation mode which are stored in the memory and a function corresponding to a selected operation mode is selected and the selected operation mode and the function are set to the optical information reader, a starting function of the selected operation mode is assigned to the trigger means and the function corresponding the selected operation mode is assigned to the function switch.

22. (previously presented) The optical information reader according to claim 21, wherein the at least one read operation mode stored in the memory includes a manual trigger mode in which the at least one read operation mode is operated by the trigger means, or an automatic trigger mode.

23. (previously presented) The optical information reader according to claim 22, wherein the at least one read operation mode stored in the memory includes an automatic detection read mode to determine if the read object is detected wherein the automatic detection read mode detects the read object by measuring the reflected light from the read object and automatically executes the at least one read operation.

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24. (previously presented) The optical information reader according to claim 22, wherein the at least one read operation mode stored in the memory includes an automatic read mode which automatically executes at predetermined times.
25. (previously presented) The optical information reader according to claim 21, wherein said memory includes a memory unit storing selected operation modes from all operation modes stored in the memory, and the function switch includes an operation mode switching function to further select a mode from the memory unit.
26. (previously presented) The optical information reader according to claim 25, wherein the selected function and a change of the operation mode is determined by pressed time of the function switch.
27. (previously presented) The optical information reader according to claim 26, wherein when the pressed time of the function switch is shorter than a predetermined time, the selected function is executed and when the pressed time of the function switch is longer than the predetermined time, the selected operation mode is changed.
28. (previously presented) The optical information reader according to claim 21, wherein the read operation mode stored in the memory includes a single read object read mode, wherein a single read object is read, and a multiple read object read mode, wherein a plurality of read objects are read.
29. (previously presented) The optical information reader according to claim 28, wherein the multiple read object read mode includes a first multiple read object read mode for outputting a first read data after reading a first read object and then outputting a second read data after reading a second read object, and a second multiple read object read mode for outputting the first and the second read data group of data after reading the first read object and then reading the second read

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object.

30. (previously presented) The optical information reader according to claim 28, wherein the multiple read object read mode includes reading a plurality of read objects during an on-condition of the trigger means, and outputting a plurality of read data after the trigger means is set to an off-condition.

31. (previously presented) The optical information reader according to claim 21, wherein the memory includes a test mode for testing a read performance of the optical information reader, the read operation mode, and the check operation mode.

32. (previously presented) The optical information reader according to claim 31, wherein the test mode includes performing a plurality of number of read operations and then measuring the number of times the read object has been read normally.

33. (previously presented) The optical information reader according to claim 21, wherein the operation mode to be selected as a function of the optical information reader in the plurality of read operation modes and check operation mode stored in the memory and the function assigned to the function switch are selected by means of a data communication with a computer connected to the optical information reader and set in the optical information reader.

34. (previously presented) The optical information reader according to claim 21, wherein the operation mode to be selected as a function of the optical information reader in the plurality of read operation modes and check operation mode stored in the memory and the function assigned to the function switch are selected by reading a bar code which sets an operation mode and a function, wherein the bar code corresponds to the operation mode to be selected for the optical information reader and the function assigned to the function switch.

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35. (previously presented) The optical information reader according to claim 21, wherein the read operation mode includes a plurality of read operation mode, each having a different reading time for the read object or a different number of reading operation.

36. (previously presented) The optical information reader according to claim 21, wherein the check operation mode stored in the memory includes a first check operation mode in which after executing a registration operation for registering a data, a check operation for checking the registered data and the read data is continuously repeated.

37. (previously presented) The optical information reader according to claim 36, wherein the check operation mode stored in the memory further includes a second check operation mode in which a registration mode for registering a data and a check operation for checking the registered data and the read data are alternately repeated.

38. (currently amended) An optical information reader comprising:

a trigger means for instructing to start reading data in a read object;

a decode means for receiving a reflected light from the read object and decoding the data in the read object;

a user-selectable function switch capable of executing a function different from that of the trigger means;

a memory storing at least one read operation mode in which data decoded by the decode means is outputted, an arbitrary character string sending function for sending a predetermined character string as a selectable function, at least one check operation mode for checking the data decoded by the decode means by comparing the decoded data with a registered data, wherein the registered data is a result of reading the read object, and outputting a check result and having an interlock function for locking the check operation when the registered data and the read data are

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not matched, and wherein the check operation cannot be executed until the lock is released, and a release function for releasing the interlock function corresponding to the check operation mode,

wherein when an operation mode is selected from a plurality of read operation mode and check operation mode which are stored in the memory and a function corresponding to a selected operation mode is selected and the selected operation mode and the function are set to the optical information reader, a starting function of the selected operation mode is assigned to the trigger means and the function corresponding the selected operation mode is assigned to the function switch.

39. (previously presented) The optical information reader according to claim 38, wherein the at least one read operation mode stored in the memory includes a manual trigger mode in which the at least one read operation mode is operated by the trigger means, or an automatic trigger mode.

40. (previously presented) The optical information reader according to claim 39, wherein the at least one read operation mode stored in the memory includes an automatic detection read mode to determine if the read object is detected wherein the automatic detection read mode detects the read object by measuring the reflected light from the read object and automatically executes the at least one read operation.

41. (previously presented) The optical information reader according to claim 39, wherein the at least one read operation mode stored in the memory includes an automatic read mode which automatically executes at predetermined times.

42. (previously presented) The optical information reader according to claim 38, wherein the read operation mode stored in the memory includes a single read object read mode, wherein a single read object is read, and a multiple read object read mode, wherein a plurality of read

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objects are read.

43. (previously presented) The optical information reader according to claim 42, wherein the multiple read object read mode includes a first multiple read object read mode for outputting a first read data after reading a first read object and then outputting a second read data after reading a second read object, and a second multiple read object read mode for outputting the first and the second read data as a group of data after reading the first read object and then reading the second read object.

44. (previously presented) The optical information reader according to claim 42, wherein the multiple read object read mode includes reading a plurality of read objects during an on-condition of the trigger means, and outputting a plurality of read data after the trigger means is set to an off-condition.

45. (previously presented) The optical information reader according to claim 38, wherein the memory includes a test mode for testing a read performance of the optical information reader, the read operation mode, and the check operation mode.

46. (previously presented) The optical information reader according to claim 38, wherein the operation mode to be selected as a function of the optical information reader in the plurality of read operation modes and check operation mode stored in the memory and the function assigned to the function switch are selected by means of a data communication with a computer connected to the optical information reader and set in the optical information reader.

47. (previously presented) The optical information reader according to claim 38, wherein the operation mode to be selected as a function of the optical information reader in the plurality of read operation modes and check operation mode stored in the memory and the function assigned to the function switch are selected by reading a bar code which sets an operation mode and a

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function, wherein the bar code corresponds to the operation mode to be selected for the optical information reader and the function assigned to the function switch.

48. (previously presented) The optical information reader according to claim 38, wherein the read operation mode includes a plurality of read operation mode, each having a different reading time for the read object or a different number of reading operation.

49. (previously presented) The optical information reader according to claim 38, wherein the check operation mode stored in the memory includes a first check operation mode in which after executing a registration operation for registering a data, a check operation for checking the registered data and the read data is continuously repeated.

50. (previously presented) The optical information reader according to claim 49, wherein the check operation mode stored in the memory further includes a second check operation mode in which a registration mode for registering a data and a check operation for checking the registered data and the read data are alternately repeated.

51. (currently amended) An optical information reader comprising:

a trigger means for instructing to start reading a data in a read object;

a decode means for receiving a reflected light from the read object and decoding the data in the read object;

a user-selectable function switch capable of executing a function different from that of the trigger means;

a memory storing at least one read operation mode in which data decoded by the decode means is outputted, a selectable function corresponding to the read operation mode, at least one check operation mode for checking the data decoded by the decode means by comparing the decoded data with a registered data, wherein the registered data is a result of reading the read

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object, and outputting a check result, and a selectable function corresponding to the check operation mode,

wherein when an operation mode is selected from a plurality of read operation mode and check operation mode which are stored in the memory and a function corresponding to a selected operation mode is selected and the selected operation mode and the function are set to the optical information reader, a starting function of the selected operation mode is assigned to the trigger means and the function corresponding the selected operation mode is assigned to the function switch.

52. (currently amended) A method for reading optical information comprising: instructing, by a trigger means, to start reading a set of data in a read object;

receiving a reflected light from the read object and decoding the data in the read object;

executing a user-selectable function switch which includes a function different from the trigger means;

storing in a memory at least one read operation mode, in which the data decoded is outputted; a previous data resending function; an arbitrary character string sending function for sending a predetermined character string as a selectable function, and at least one check operation mode for checking the data decoded;

wherein when an operation mode is selected from a plurality of read operation mode and check operation mode which are stored in the memory and a function corresponding to a selected operation mode is selected and the selected operation mode and the function are set to the optical information reader, assigning a starting function of the selected operation mode to the trigger switch and assigning the function corresponding to the selected operation mode to the function switch.

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53. (previously presented) The method of claim 52, further comprising operating the at least one operation mode stored in the memory by a manual trigger mode or an automatic trigger mode.
54. (previously presented) The method of claim 53, comprising determining if the read object is detected by measuring the reflected light from the read object and automatically executing the at least one read operation.
55. (previously presented) The method of claim 53, further comprising executing an automatic read mode at predetermined times.
56. (previously presented) The method of claim 52, further comprising storing a selected operation modes in a memory unit from all operation modes stored in the memory, and further selecting a mode from the memory unit by the function switch which includes an operation mode switching function.
57. (previously presented) The method of claim 56, further comprising determining the selected function and a change of the operation mode by pressed time of the function switch.
58. (previously presented) The method of claim 57, executing a selected function by having the pressed time of the function switch shorter than a predetermined time, and changing the selected operation mode by having the pressed time of the function switch longer than the predetermined time.
59. (previously presented) The method of claim 52, further comprising reading a single read object in a single read object read mode and reading a plurality of read objects in a multiple read object read mode.
60. (previously presented) The method of claim 59, comprising outputting a first and a second read data as a group of data after reading a first read object and then reading a second

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read object.

61. (previously presented) The method of claim 59, wherein the multiple read object read mode includes reading a plurality of read objects during an on-condition of the trigger means, and outputting a plurality of read data after the trigger means is set to an off-condition.

62. (previously presented) The method of claim 52, further comprising testing a read performance of the optical information reader by a test mode.

63. (previously presented) The method of claim 62, wherein the test mode includes performing a plurality of number of read operations and then measuring the number of times the read object has been read normally.